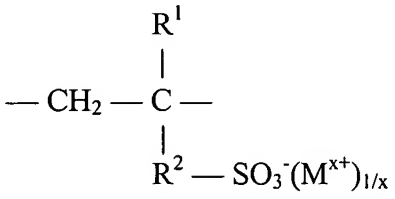
CLAIM LISTING

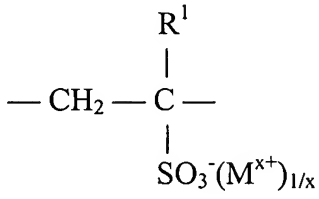
1. (withdrawn) A method of cementing a subterranean zone penetrated by a well bore comprising the steps of:

(a) preparing or providing a cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive comprised of:

a) 5 to 93 weight % of monomers of the formula (Ia) or (Ib) or both



(Ia)



(Ib)

wherein

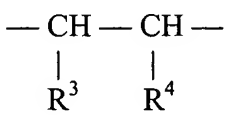
R^1 is hydrogen or C_1-C_5 alkyl,

R^2 is C_1-C_{20} alkylene, carboxy C_1-C_{20} alkylene, carboamido C_1-C_{20} alkylene or phenylene,

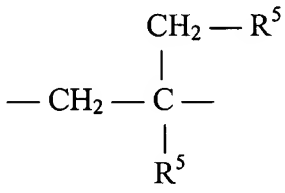
M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III and

x is 1 to 3;

b) 1 to 50 weight % of monomers of the formula (IIa) or (IIb) or both



(IIa)



(IIb)

wherein

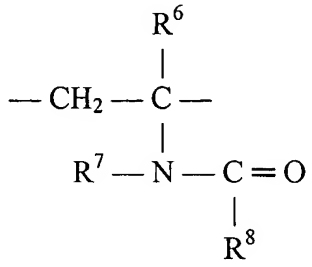
R^3 and R^4 are $-COO^-(M^{x+})_{1/x}$ or $-\overset{\overset{O}{\|}}{C}-O-\overset{\overset{O}{\|}}{C}-$,

R^5 is $-COO^-(M^{x+})_{1/x}$,

M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III and

x is 1 to 3;

c) 5 to 93 weight % of a monomer of the formula (III)



(III)

wherein

R^6 is hydrogen or C_1-C_5 alkyl,

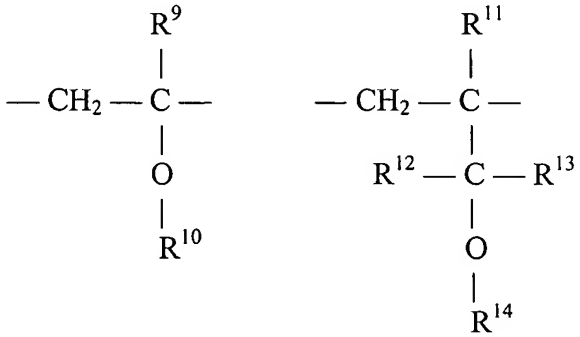
R^7 is hydrogen, C_1-C_{10} alkyl or $-(CH_2)_y-$,

R^8 is hydrogen, C_1-C_{10} alkyl or $-(CH_2)_y-$, and

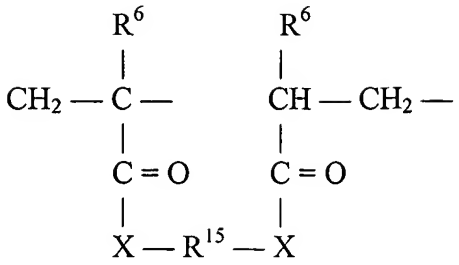
y is 3 to 7;

and

d) 1 to 25 weight % of monomers of the formulas (IVc) or (IVa) and (IVc) or (IVb) and (IVc) or (IVa), (IVb) and (IVc).



(IVa) (IVb)



(IVc)

wherein

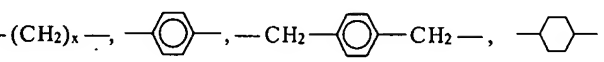
R^6 is hydrogen or C_1-C_5 alkyl,

R^9 is hydrogen or C_1-C_5 alkyl,

R^{10} is C_1-C_{10} alkyl, C_1-C_{10} aminoalkyl, C_1-C_{20} hydroxyalkyl, C_1-C_4 alkyl or hydroxyl terminated mono- or poly-C_2-C_3 alkylenoxy (with 1 to 400 alkylenoxy units), C_7-C_{20} alkylaryl, C_7-C_{20} hydroxyalkylaryl, C_6-C_{10} aryl, C_6-C_{10} hydroxyaryl,

R^{11}, R^{12} and R^{13} are hydrogen or C_1-C_5 alkyl,

R^{14} is hydrogen, C_1-C_{20} alkyl, C_1-C_{10} aminoalkyl, C_1-C_{20} hydroxyalkyl, C_1-C_4 alkyl or hydroxyl terminated mono- or poly-C_2-C_3 alkylenoxy (with 1 to 400 alkylenoxy units), C_7-C_{20} alkylaryl, C_7-C_{20} hydroxyalkylaryl, C_6-C_{10} aryl, C_6-C_{10} hydroxyary or with hydroxyl substituted C_1-C_{20} alkylensulfonic acids and their ammonium, alkali metal or alkaline earth metal salts,

R^{15} is 

X is O, NH, and

x is 1 to 6

wherein the monomers add up to 100 weight %.

(b) placing said composition in said subterranean zone; and

(c) allowing said cement composition to set into an impermeable solid mass therein.

2. (withdrawn) The method of claim 1 wherein R^1 and R^2 of said monomers of the formulas (Ia) and (Ib) are hydrogen and — CO — NH — $C(CH_3)_2$ — CH_2 —, respectively.

3. (withdrawn) The method of claim 1 wherein M in said monomers of the formulas (Ia), (Ib), (IIa) and (IIb) are metal cations wherein said +I metal cations are alkali metal ions, preferably sodium and potassium ions, said +II metal cations are alkaline earth metal ions, preferably calcium and magnesium ions, and said +III metal cations are aluminum or iron ions.

4. (withdrawn) The method of claim 1 wherein y is from 3 to 5 in said monomer of the formula (III).

5. (withdrawn) The method of claim 1 wherein in said monomer of the formula (IV), R^9 is hydrogen, R^{10} is $-CH_2-$, X is NH and x is 1.

6. (withdrawn) The method of claim 1 wherein said fluid loss control polymer additive comprises 40 to 83 weight % of said monomers of the formula (Ia) or (Ib) or both, 5 to 48 weight % of said monomers of the formulas (IIa) or (IIb) or both, 10 to 53 weight % of said monomer of the formula (III) and 1 to 10 weight % of said monomer of the formula IV.

7. (withdrawn) The method of claim 1 wherein said fluid loss control polymer additive has a molecular weight in the range of from about 10,000 to about 3,000,000 grams per mole.

8. (withdrawn) The method of claim 1 wherein said fluid loss control polymer additive has a molecular weight in the range of from about 100,000 to about 1,000,000 grams per mole.

9. (withdrawn) The method of claim 1 wherein said fluid loss control polymer additive is present in said cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement therein.

10. (withdrawn) The method of claim 1 wherein said hydraulic cement in said cement composition is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

11. (withdrawn) The method of claim 1 wherein said hydraulic cement is Portland cement.

12. (withdrawn) The method of claim 1 wherein said water in said cement composition is selected from the group consisting of fresh water and salt water.

13. (withdrawn) The method of claim 1 wherein said water is present in said composition in an amount in the range of from about 35% to about 100% by weight of cement therein.

14. (original) A method of cementing a subterranean zone penetrated by a well bore comprising the steps of:

(a) preparing or providing a cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive comprising 77.9 weight % of the calcium salt of 2-acrylamido-2-methyl propane sulfonic acid, 8 weight % of the calcium salt of maleic acid, 11 weight % of N-vinyl caprolactam, 3 weight % of 4-hydroxybutyl vinyl ether and 0.1 weight % of methylene bisacrylamide;

(b) placing said composition in said subterranean zone to be cemented; and

(c) allowing said cement composition to set into an impermeable solid mass therein.

15. (original) The method of claim 14 wherein said fluid loss control polymer additive has a molecular weight in the range of from about 100,000 to about 1,000,000 grams per mole.

16. (original) The method of claim 14 wherein said fluid loss control polymer additive is present in said cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement therein.

17. (original) The method of claim 14 wherein said hydraulic cement in said cement composition is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

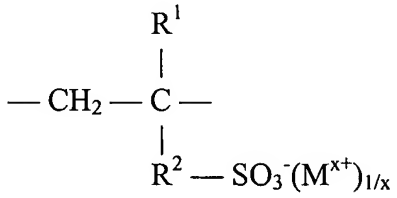
18. (original) The method of claim 14 wherein said hydraulic cement is Portland cement.

19. (original) The method of claim 14 wherein said water in said cement composition is selected from the group consisting of fresh water and salt water.

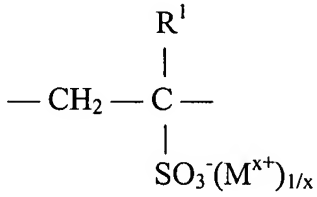
20. (original) The method of claim 14 wherein said water is present in said composition in an amount in the range of from about 35% to about 100% by weight of cement therein.

21. (withdrawn) A well cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive that comprises:

a) 5 to 93 weight % of monomers of the formula (Ia) or (Ib) or both



(Ia)



(Ib)

wherein

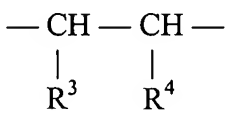
R^1 is hydrogen or C_1-C_5 alkyl,

R^2 is C_1-C_{20} alkylene, carboxy C_1-C_{20} alkylene, carboamido C_1-C_{20} alkylene or phenylene,

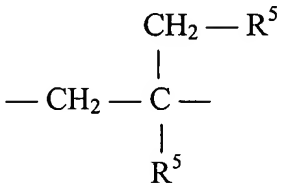
M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III and

x is 1 to 3;

b) 1 to 50 weight % of monomers of the formula (IIa) or (IIb) or both



(IIa)



(IIb)

wherein

R^3 and R^4 are $-COO^-(M^{x+})_{1/x}$ or  ,

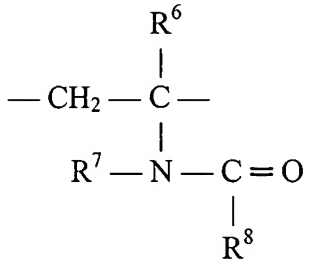
R^5 is $-COO^-(M^{x+})_{1/x}$,

M is hydrogen, ammonium or a metal cation in the oxidation state +I, +II or +III

and

x is 1 to 3;

c) 5 to 93 weight % of a monomer of the formula (III)



(III)

wherein

R^6 is hydrogen or C_1-C_5 alkyl,

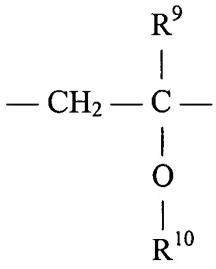
R^7 is hydrogen, C_1-C_{10} alkyl or $-(CH_2)_y-$,

R^8 is hydrogen, C_1-C_{10} alkyl or $-(CH_2)_y-$, and

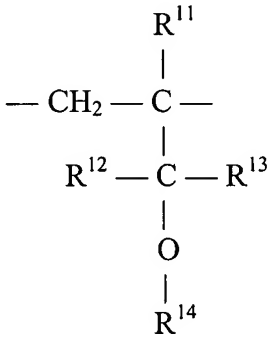
y is 3 to 7;

and

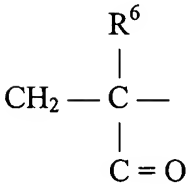
d) 1 to 25 weight % of monomers of the formulas (IVc) or (IVa) and (IVc) or (IVb) and (IVc) or (IVa), (IVb) and (IVc).

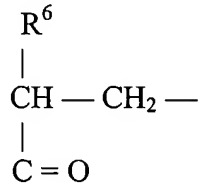


(IVa)



(IVb)





(IVc)

wherein

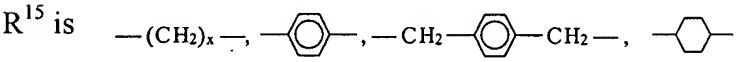
R^6 is hydrogen or C_1-C_5 alkyl,

R^9 is hydrogen or C_1-C_5 alkyl,

R^{10} is C_1-C_{10} alkyl, C_1-C_{10} aminoalkyl, C_1-C_{20} hydroxyalkyl, C_1-C_4 alkyl or hydroxyl terminated mono- or poly-C_2-C_3 alkylenoxy (with 1 to 400 alkylenoxy units), C_7-C_{20} alkylaryl, C_7-C_{20} hydroxyalkylaryl, C_6-C_{10} aryl, C_6-C_{10} hydroxyaryl,

R^{11}, R^{12} and R^{13} are hydrogen or C_1-C_5 alkyl,

R^{14} is hydrogen, C_1-C_{20} alkyl, C_1-C_{10} aminoalkyl, C_1-C_{20} hydroxyalkyl, C_1-C_4 alkyl or hydroxyl terminated mono- or poly-C_2-C_3 alkylenoxy (with 1 to 400 alkylenoxy units), C_7-C_{20} alkylaryl, C_7-C_{20} hydroxyalkylaryl, C_6-C_{10} aryl, C_6-C_{10} hydroxyaryl or with hydroxyl substituted C_1-C_{20} alkylensulfonic acids and their ammonium, alkali metal or alkaline earth metal salts,

R^{15} is 

X is O, NH, and

x is 1 to 6

wherein the monomers add up to 100 weight %.

22. (withdrawn) The composition of claim 21 wherein said fluid loss control polymer additive is present in said cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement in said composition.

23. (withdrawn) The composition of claim 21 wherein said hydraulic cement is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

24. (withdrawn) The composition of claim 21 wherein said hydraulic cement is Portland cement.

25. (withdrawn) The composition of claim 21 wherein said water is selected from the group consisting of fresh water and salt water.

26. (withdrawn) The composition of claim 21 wherein said water is present in an amount in the range of from about 35% to about 100% by weight of cement of said composition.

27. (original) A well cement composition comprising a hydraulic cement, sufficient water to form a pumpable slurry and a fluid loss control polymer additive that comprises 77.9 weight % of the calcium salt of 2-acrylamido-2-methyl propane sulfonic acid, 8 weight % of the calcium salt of maleic acid, 11 weight % of N-vinyl caprolactam, 3 weight % of 4-hydroxybutyl vinyl ether and 0.1 weight % of methylene bisacrylamide.

28. (original) The composition of claim 27 wherein said fluid loss control polymer additive has a molecular weight in the range of from about 100,000 to about 1,000,000 grams per mole.

29. (original) The composition of claim 27 wherein said fluid loss control polymer additive is present in said cement composition in an amount in the range of from about 0.1% to about 2% by weight of cement in said composition.

30. (original) The composition of claim 27 wherein said hydraulic cement is selected from the group consisting of Portland cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

31. (original) The composition of claim 27 wherein said hydraulic cement is Portland cement.

32. (original) The composition of claim 27 wherein said water is selected from the group consisting of fresh water and salt water.

33. (original) The composition of claim 27 wherein said water is present in an amount in the range of from about 35% to about 100% by weight of cement of said composition.